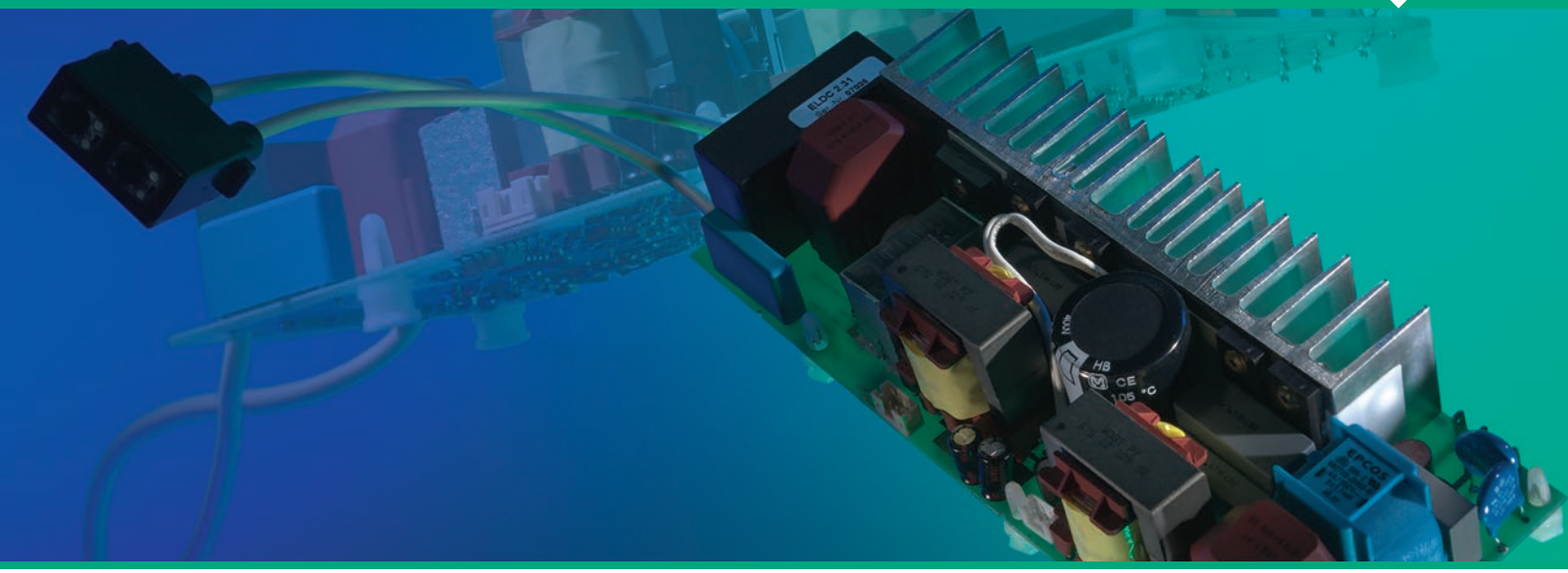
USHIO Applying Light to Life®



SMARTARC™ ELDC 2.31

Power Supply For EmArc® Lamps

Ushio's SmartArc™ electronic power supply with digital power management and microprocessor controls is a compact and "intelligent" solution for operating DC operated arc discharge lamps.

FEATURES & BENEFITS

- Operates EmArc® DC Lamps in Power Ranges Between 100W-200W and Operating Voltages Between 36V-98V
- Output Selections by Solder Bridges in 6 Steps (Please Consult Ushio America, Inc. Engineering for Further Details)
- Power Factor Corrected Line Input, Built-In EMI-Filter Voltage Range 90VAC to 264VAC. Meets CE & FCC Part "A"
- Newly Designed Anti-Aging and Arc Control Circuit for High Optical Reliability Over Lamp Lifetime
- Digital Power Management and Micro-Processor Controlled With High Output Stability Over Life
- Output is Short Circuit Protected
- 90°C Thermal Shut-Off Feature
- Photo Feedback Terminal Connection Enables Customer Individualized Lighting System Regulation
- Auxiliary 24V/200mA Output at Two Terminals for Fan Drive – Available When the Lamp is in Operation
- UL1950, UL508, UL2601, CSA C22.2 Certification

ELDC 2.31 - Item #5002001

All values are valid at 25° ±5°C, unless otherwise noted.

INPUT DATA

Nominal Operation	Nominal	Tolerance
Input Voltage AC (V)	100 – 240	90 – 264
Input Voltage DC (V)	100 – 300	90 – 340
System Wattage (W)	200	100 – 200*
Input Current (A)	—	1 – 3
Line Frequency (Hz)	50/60	47 – 63
Power Factor (1)	1.0	>0.93

*Tolerance for System wattage dependent on preset.

LAMP OUTPUT DATA

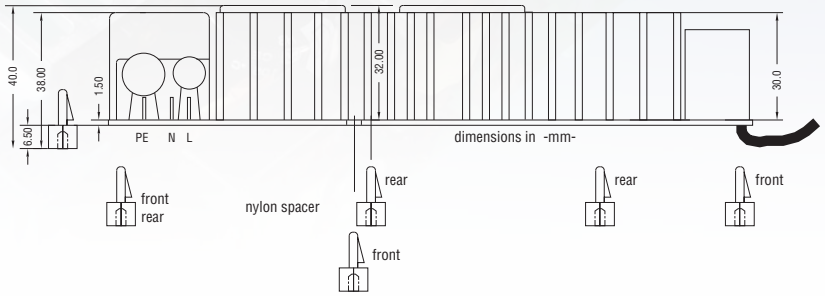
Ignition	Nominal	Tolerance	Remarks
Ignition Voltage (kV peak)	±14	±12 – ±16	Load Capacity <20pF
Ignition Time (sec.)	1	0.9 – 1.1	
Automatic Restart Counter (1)	5	—	Attempts
Nominal Operation	**Nominal**	**Tolerance**	
Lamp Voltage (V)	60	36 – 95	
Lamp Wattage (W)	100 – 200*	—	
Lamp Current (A)	—	I Max = 5.7	
Cut-Off Voltage, End-Life (V)	98	99 – 101	
Open Circuit Voltage (V)	240	230 – 260	

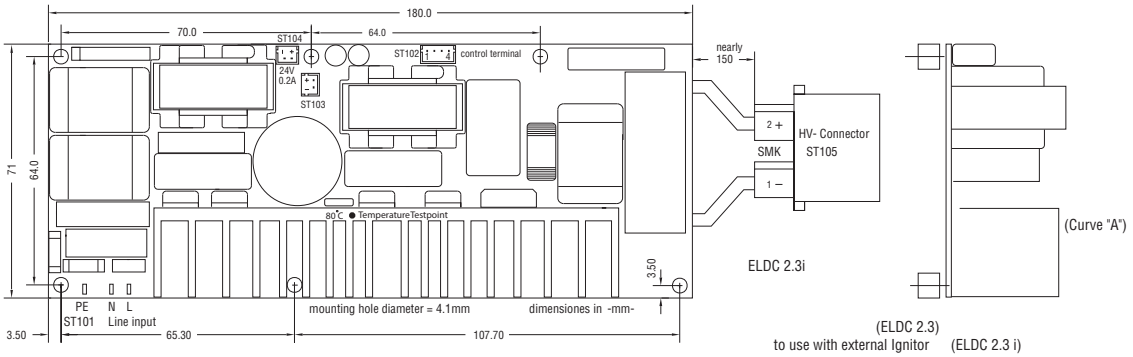
*Presettable in 6 steps. Continuous variable from preset to 200W by optocoupler.

MISCELLANEOUS

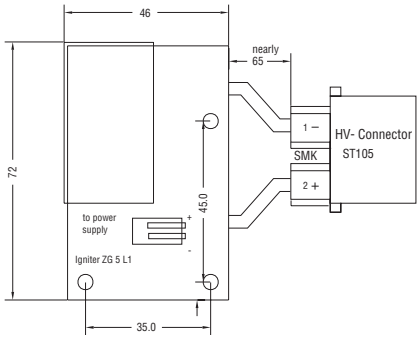
Nominal Operation	Nominal	Tolerance
Efficiency (1)	0.88	—
Ambient Temperature (°C)	+25	+10 – +50
Max. Temperature at Test Point (°C)	+80	—
Switch Off Temperature (°C)	+90	—

FRONT VIEW & HEIGHT





uC controled digital Power Management



Nominal Dimensions

Length (mm) 180
Width (mm) 71.0
Height (mm) ..... 30.0 / 32.0
Weight (Kg) 0.472

All dimensions are in millimeters.

Plugs and Cables	Manufacturer / Type	Remarks / Header / Contacts
Ballast Mains Plug	ST101 3X AMP faston 2.8 x 0.8 Single terminals	
Ballast Interface Plug	S102 JST/B4B-PH-K-S (grid 2mm) 4 pin	JST PHR4/SPH-002T-P0.5S
Fan Connection Plug	STH103, STH104 JST/B2B-EH-A For 24V fan 100mA (2.6W) max. Output capacity 200mA/25V±1V (Both terminals together)	JST EHR2/SEH-001T-P0.6
Connection Ballast-Ignitor	ST105 AMP640445-2 (ELDC 2.3i)	AMP 770 849-2/770522-1
Ignitor HV-plug to Lamp Lamp Cable	Housing: SMK/101CCT-09-01R Tecnosil/AWG20 UL Style 3239, 20kVDC	ZG 5L or built-in ignitor

SPECIFICATIONS

PIN ASSIGNMENT AND FUSE

Connector	Signal	Status	Description
Line Input ST101			
PIN 1	AC in -L-		AC wide range input voltage 90V-264VAC
PIN 2	AC in -N-		DC wide range input voltage 90V-340VDC
PIN 3	PE		
Control Interface			
PIN 1 input	Photo-feedback/Dimming		
PIN 2 output	Lamp Running	0-10mA (input) dim to preset level 2mA, true if low (output) open collector	
PIN 3	GND		
PIN 4	GND		

COOLING RECOMMENDATIONS:

The unit has two 25V terminals for driving one or two fans. One is intended for the power supply and one for the lamp. The maximum total output current for both outputs is 200mA. Please note that the output voltage is only available when the lamp is in operation.

ENVIRONMENTAL REQUIREMENTS:

Storage Temperature Range.....-20°C – +50°C
Humidity Range .....20% – 95% non-condensing
Altitude (Operating).....0 ft. to 10,000 ft.

STANDARDS:

Safety and Performance
CSA C22.2 No.60950 UL60950,UL508, UL2601 Certified
CB-Test and UL must be completed with the final product

CAUTION:

HEAT SINK AND SAFETY - The heat sink is connected to line voltage. Do not touch or connect to PE!

USHIO

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Refer to website for product availability, compliance, and regulations. Specifications may be subject to change without prior notice.

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